

AMENDMENTS TO THE CLAIMS

1-60. (Canceled)

61. (Previously presented): A recombinant *Streptomyces* host cell which is genetically modified for enhanced synthesis of a polyketide,

wherein said modification comprises incorporation of the *matBC* gene from *Streptomyces coelicolor* or the *matBC* gene from *Rhizobium trifoli* wherein the *matBC* gene is in addition to endogenous *matBC*.

62. (Canceled)

63. (Previously presented): The host cell as in claim 61 wherein the modification further comprises incorporation of the *matA* gene from *Rhizobium trifoli*.

64. (Previously presented): The host cell as in claim 61 wherein said modification further comprises incorporation of at least one expression system for a modular polyketide synthase (PKS).

65. (Previously presented): The host cell as in claim 61 wherein the host cell is *Streptomyces coelicolor*.

66. (Previously presented): The host cell as in claim 61 wherein the *matBC* gene is from *Rhizobium trifoli*.

67. (Previously presented): The host cell as in claim 64 wherein the PKS is DEBS.

68. (Previously presented): The cell as in claim 61

wherein the polyketide is 6-dEB.

69. (Currently amended): A recombinant *E. coli* host cell which is genetically modified for synthesis of a polyketide,  
wherein said modification comprises  
incorporation of [[a]] the *matBC* gene from *Streptomyces coelicolor* or the *matBC* gene from *Rhizobium trifoli*, and  
incorporation of at least one expression system for a modular polyketide synthase (PKS), and  
incorporation of the *sfp* gene from *Bacillus subtilis*.

70. (Canceled)

71. (Previously presented): The host cell as in claim 69  
wherein the modification further comprises incorporation of the *matA* gene from *Rhizobium trifoli*.

72. (Previously presented): The host cell as in claim 69  
wherein the *matBC* gene is from *Rhizobium trifoli*.

73. (Previously presented): The host cell as in claim 69  
wherein the PKS is DEBS.

74. (Previously presented): The host cell as in claim 69 wherein the polyketide is 6-dEB.

75-77. (Canceled)

78. (Previously presented): A method to produce a polyketide which method comprises culturing the cells of claim 61 under conditions wherein said polyketide is produced.

79. (Currently amended): A method to assess the results of a procedure effecting modification of polyketide synthase genes ~~according to claim 61~~, resulting in a mixture of said modified genes which method comprises

transfecting a culture of *Streptomyces* of claim 61 with said mixture of modified genes, culturing individual colonies of said transformed *Streptomyces*, and assessing each colony for polyketide production.

80. (Previously presented): The method of claim 78 which further includes providing a substrate, wherein the substrate is of the formula  $RCH(COOH)_2$  wherein R is H, methyl or ethyl.

81. (Previously presented): A method to produce a polyketide which method comprises culturing the cells of claim 69 under conditions wherein said polyketide is produced.

82. (Currently amended): A method to assess the results of a procedure effecting modification of polyketide synthase genes ~~according to claim 69~~, resulting in a mixture of said modified genes which method comprises

transfecting a culture of *E. coli* of claim 69 with said mixture of modified genes, culturing individual colonies of said transformed *E. coli*, and assessing each colony for polyketide production.

83. (Previously presented): The method of claim 81 which further includes providing a substrate, wherein the substrate is of the formula  $RCH(COOH)_2$  wherein R is H, methyl or ethyl.

84. (New): A recombinant *E. coli* host cell which is genetically modified for synthesis of a polyketide,

wherein said modification comprises

incorporation of a propionyl CoA carboxylase (pcc) expression system comprising the *pccB* and *accA2* genes from *S. coelicolor* wherein said pcc expression system produces an enzyme capable of synthesizing 2S-methylmalonyl CoA,

incorporation of at least one expression system for a modular polyketide synthase (PKS), and  
incorporation of at least one expression system for a phosphopantetheinyl transferase that phosphopantetheinylates the PKS;  
wherein the cell's *prpA-D* operon is deleted.

85. (New): A method to produce a polyketide which method comprises culturing the cells of claim 84 under conditions wherein said polyketide is produced.